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ABSTRACT

This paper describes the evolution of a graduate program in education called "Cognitive Development and Teaching Strategy." The thesis of the course is that developmental theory offers insights which can help teachers create a "thinking environment" in their classrooms. Each successive version of the course exemplified a different view of the relationship between theory and practice and the most effective way to help teachers integrate these two sources of knowledge. The first version of the course is referred to as "translation" or how to translate and apply theory. The second version, which developed from a feeling that the first was inadequate, was characterized as the "disequilibrium" model, in which the instructor tried to change thinking by creating cognitive dissonance in order to stimulate critical reflection about teaching thinking. The third version, still in its developmental stage, is based on the concept of the "design studio" in which instructor and students work together as reflective practitioners. Teaching is the central focus; theory contributes to discussion in response to questions raised by the problems of practice. (JD)

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WRITING AND THINKING IN TEACHER EDUCATION: A THEORY BASED APPROACH

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WRITING AND THINKING IN TEACHER EDUCATION: A THEORY BASED APPROACH

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Studies of teaching practices in American classrooms might lead critics to believe that teaching occurs in a theoretical and empirical vacuum with respect to learning beyond the memory level. Classrooms are sterile, the curriculum is meaningless, dialogue is minimal, writing is "fill-in-the-blanks." (Applebee, 1981; Goodlad, 1984; Langer, 1984; Sirotnik, 1983). These conditions violate essential theoretical principles for encouraging intellectual engagement; research on teaching and learning offers validation for a rich array of instructional alternatives. Nonetheless, the weight of evidence suggests that most teaching proceeds as if in ignorance of what is to be learned from this literature. It must be acknowledged that conditions in individual schools can severely restrict teacher's use of innovative practices that deviate from local norms for "good teaching." Still, most teachers have sufficient latitude to engage students in far more stimulating work than is now the case. Many have studied educational theories and models as part of their training. Frequently, however, theory courses are not valued; student-teachers frequently believe that only "how-to" courses can really help them teach.

Several factors conspire to widen the gap between theory and practice. First, public-school teachers tend not to think about teaching from a theoretical or empirical perspective (Bolster, 1983). Furthermore, theory often does not translate directly into practice;

it can provide guidance and suggest hypotheses for experimentation, but it does not provide step-by-step instructions for specific teaching situations. Finally, reformers drawing on theory or research frequently encounter resistance. The theoretically derived presecriptions they offer may be accepted by teachers on a verbal level; but when implemented, the suggested innovations tend to be modified to conform to the teachers' "curricular system of meaning" rather than the intentions of the change agent (Swanson-Owens, 1986). Theory, for the most part, remains a body of knowledge distinct from the wisdom experience that guides teaching practice. From a teacher's perspective, much theory and research seems to answer questions they have not asked and are not likely to ask. It may not in fact be the case that knowing a great deal of theory makes one a better teacher.

On the other hand, most educators reject the view of teaching as a mechanical process, guided by "teacher-proof" curricula. A major purpose of professional education, especially at the graduate level, is to foster teaching that is consistent with empirically validated theoretical knowledge. So educational psychology courses continue to teach theory and, with varied success, to encourage its application. However, for the reasons cited earlier, the majority of teachers need considerable guidance if theory is to inform their practice.

As an instructor in a graduate program in education, I want my students to increase their knowledge of theory, but I also want their theoretical understanding to affect their practice. In addressing the high-level thinking demands posed by this problem, my understanding of the relationship between theory and practice has changed, along with my approach to teaching theory. In this paper I describe three versions of a theory course I teach for graduate students in education. The course is called "Cognitive Development and Teaching

Strategy." Its thesis is that developmental theory offers insights which can help teachers create a "thinking environment" in their classrooms. Each successive version of the course exemplifies a different (and I believe increasingly adequate) view of the relationship between theory and practice and the most effective way to help teachers integrate these two sources of knowledge. I refer to the first version as the "translation" or "how-to" model. The second version is best characterized as the "disequilibrium" model. The third version, still on the drawing boards, I'll call the "reflective practitioner" model (from Schon, 1985).

1. The Translation Model

When I first taught this course, I took a practical approach, emphasizing what I thought teachers needed to do to "teach developmentally." In this "how-to" version, I "translated" cognitive-developmental theory into a particular design model, the learning cycle. We invented, tried out and discussed examples, applying the learning cycle to their teaching situations to give them first-hand experience of this model during our time together. (Kurfiss, 1984).

Although students generally did well on assigned projects, I noticed an obligatory quality to them, a lack of freshness, as if they were just doing what I asked in order to be done with it. Often, despite instruction sheets, suggestions and examples, projects lacked key elements such as an evaluation plan or a clear statement of the purpose of the learning activity described. Dissatisfied with these outcomes, I began to reexamine my assumptions about connecting theory and practice. I thought of it as a "translation" process, taking ideas from the language of theory and translating them into the language of practice. But these bright, achievement-oriented teachers

were not "getting it." Their responses might be construed as "resistance." Resistance, however, is another way of saying that they have their own theories, their own constructs about teaching, and that these constructs were asserting themselves as imaginative variations on the theme I was trying to get them to play my way. And if these variations appear even when a grade is at stake, they are even more likely to appear when the teacher is teaching, when I'm nowhere around. Like children whose behavior is shaped by punishment, they do what they please when there's no one around to punish them. In short, teaching about theory the way I was doing it was not likely to affect my students' practice. To do that, I realized I would have to change their way of thinking about teaching.

With this realization the instructional problem changed. Although previously my intent was to teach theories and how to apply them, I now saw that I needed a teaching model designed to develop a more complex system of thinking about teaching. I could easily draw on the cognitive-developmental concepts to design such a model. And what would be more appropriate and satisfying than to teach an educational theory course designed to be consistent with the subject's implications for teaching? Thus was born Version 2 in the continuing evolution of my course.

2. The Disequilibrium Model.

The new, revised course design drew on classical developmental theory, which views cognitive discrepancy as a primary source of intellectual growth. According to Piaget, change in thinking and behavior occurs when the learner encounters discrepancies between beliefs and experience or new knowledge. The process of reorganizing thought to reduce discrepancies is called "equilibration" by Piaget. The state of confusion aroused by cognitive discrepancies is often

referred to as "disequilibrium," though Festinger's term "cognitive dissonance" is more familiar to most educators. In planning Version 2 I also had in mind Freire's pedagogy which aims to produce "critical reflection" by "problematizing experience." Freire's model suggested to me that an appropriate stimulus for cognitive dissonance would be the students' <u>experience:</u> their everyday experience as teachers and their experience as students in my course. So I designed the course to "stimulate critical reflection [about teaching thinking] by challenging them to observe their own resposes to dfficult intellectual work, and also by asking them to justify their teaching plans on theoretical and/or empirical grounds...[I wanted to] create conditions which would make literature on learning, develpment, cognitive proceses, and developmental instruction relevent--even compelling...[to them in their practice]." (Kurfiss, 1985, p. 7) I wanted them to recognize there are no easy solutions to the problems of teaching thinking, and to take resonsibility for constructing a "thinking environment" suited to their goals, their students, the demands of their curriulum, and the norms of their instititions.

The subject of our inquiry experience was "teaching thinking." Together we examined their teaching goals and behavior, articulated underlying assumptions, and considered whether their goals, assumptions, and behaviors, were congruent. We also engaged in "metathinking," examining our own responses as we addressed our central problem. I designed the course to encourage the students to challenge each other's ideas, increasing opportunities for discrepancies to arise. Written projects and journals supported and extended our discusson. Figure 1 summarizes some of the particulars of implementation.

The course was organized around projects and journals; reading

was assigned but no tests were given. At the first class students joined groups according to their preferred approach to learning a new topic: theoretical, practical, empirical, observational (drawn from Kolb, 1984). Groups were to design a presentation that would be "useful for other teachers interested in teaching thinking." Each group had 7 weeks to develop a plan, prepare a draft presentation for feedback from the class, and prepare a finished product. Groups met weekly in class; some met outside of class as well, on their own initiative. I also assigned one lesson plan project. Major assumptions guiding the lesson plan design were to be spelled out and the relationship between assumptions and methods explained. Two weeks before the lesson plans were due, students reviewed each others' drafts in their groups. Students also kept journals, with at least one weekly entry about the course or their own teaching and reflections on what they observed or felt.

The course did stimulate critical reflection as well as cognitive dissonance. In their journals, about half the students described their frustration and uncertainty about "what you want." The number of requests for structure and guidance from me was far greater than usual. However, I also found evidence of increased complexity in their thinking about teaching (Kurfiss, 1985). Projects were fresh, lively and diverse. Much creativity and humor emerged in class discussions and presentations. I was impressed by their desire to encourage the development of their students. All but one or two of the 22 graduate students in the class seem to have recognized a key point I hoped to convey: that "teaching thinking" requires thought; that thinking is challenging and often creates uncertainty; and that to create and live in a "thinking environment" requires courage and imagination as well as "knowledge."

From this experience I learned that teachers could make their own sense of theory without my imposing on them my preferred version of what practice should be like. I still want them to become familiar with developmental theories, but not so that they can be directly applied to instructional planning. Rather, I now view theory as one of many tools for thinking about teaching, and my analysis of their lesson plan designs gave me reason to believe these teachers had begun to use it in that way. But while I may have made theory more valuable to them, the method seems to have had an unintended negative effect. The difficulty and uniqueness of the course left the impression that theory and research are appropriate subjects of inquiry when one has the time, but that such inquiry is hard work and therefore, not to be tackled on one's own. The extensive conversations I had with these teachers helped to impress upon me the degree to which the everyday world of teaching crowds out opportunities for inquiry about teaching. The public school classroom is a world of action, problem-solving, and moment-to-moment decision-making, a world of thinking on one's feet. The teachers' lounge (as a final skit conveyed dramatically) is a place to blow off steam. Theorizing is a luxury -- indeed, an oddity -- in such a world.

As I studied my students' responses to my course, two predominant themes emerged (Kurfiss, 1985). As noted earlier, there were frequent requests for "more structure." The students clearly understood that I intentionally created disequilibrium. Nonetheless, many felt there was "too much" of it; perhaps I had overdone it. Secondly, I noted that they felt their lack of prior knowledge about developmental theory hindered them in formulating inquiry of the type I had proposed. These concerns posed a serious challenge to my design. Once I might have dismissed them as symptoms of an

undersirable dependency and intellectual immaturity. But the integrity and creativity I had observed in their responses to the course would not permit such an interpretation. Instead, I reconsidered my approach. Could there be a model that would do justice to the challenge of teaching thinking, yet encourage rather than discourage these teachers in their search for more effective, better informed practice?

3. The Reflective Practitioner Model.

As I thought about the latest version of my course, the particular theoretical approach I chose began to seem less important than the process I went through in creating and reconstructing, for this audience, the creation of this course. In designing, reflecting upon, and critiquing this curious amalgam of theories, intentions, student responses and common sense, I was engaging in what Schon calls "reflective practice." The Reflective Practitioner "reflects in action." That is, she asks as she works, "What is happening? How am I thinking about it? How can I alter the situation, experiment with it to understand more fully what it is about?" This reflective, experimental stance toward practice is what I had hoped to foster by creating dissonance and problematizing the everyday experience of teaching.

At the heart of reflective practice is the process of <u>design.</u> According to Schon, "we design whenever we enter messy, uncertain situation, make sense, and reflect upon the sense we have made" by "letting the situation talk back to us." A design is a "web of moves" aimed at solving a particular problem, whether it be to create a building, to present an idea in writing, or to develop a "thinking environment" in a third grade classroom.

In considering where people learn to be reflective practitioners,

Schon offers the design studio as a prototype. In the design studio, students and teacher together contemplate specific problems, such as designing a building for a "messy" hillside site. Students offer solutions in the form of designs, reflect on the consequences of their designs, and consider subsequent design moves, including revisions. In the studio setting, students are guided or "coached" by a master designer whose tacit knowledge includes a wealth of theory as well as practical experience with many design situations. Through demonstration, questioning, explanation, and suggestion over time, the master conveys her sense of design to the student. She also models and engages the student in the Reflective Practitoner stance which ultimatly must be internalized if the student is to continue to progress beyond the apprenticeship period. This stance is not unlike that cultivated in collaborative, revision-centered writing classrooms.

Reflecting on my course in light of this model has helped me identify the design moves needed to create a more satisfying course. First, the reflective practitioner model offers me a basis for distinguishing between productive and unproductive dissonance in the course. Productive dissonance is that which results from confronting ambiguities that arise from any interesting design problem. Creating a "thinking environment" is a challenging and significant design problem faced by teachers. To succeed, they must create conditions and experiences appropriate to <u>their</u> situation. While the situation includes some inherent constraints, it is by nature "messy," i.e., replete with possibilities. It would be impossible, I think, to eliminate dissonance from this source and still foster reflective practice.

However, other dissonance-inducing aspects of the course seem less essential to me now. For example, last time I created a novel situation, the group projects, and compelled students to deal with it so they could experience open-ended inquiry. While they did make some discoveries about theory, the might have learned more through guided readings, freeing energy to respond to the open-ended design problems that I now see as central to the course.

Schon's model also suggests a different view of the classroom. To balance the challenge of using theory in new ways, students need a supportive context that allows them to rehearse the reflective skills I wanted them to internalize. The classroom, where we can share time, knowledge, and resources, affords the greatest opportunity for support. It is an ideal setting in which we can play with ideas about teaching practice with minimal risk. In it, we can demonstrate, role-play, question, argue, explore, try out, revise and try again. We can create a community in which we externalize the processes of reflective practice so that they may be "internalized as thought" (Bruffee, 1984), and carried forward into the everyday world of each teacher. For this to occur, dialogue in the classroom should address and extend the thinking teachers do about practice. In terms of the reflective practitioner model, the classroom can function as a design studio. Teaching is the central focus; theory contributes to our discussion in response to questions raised by the problems of practice.

In addition to clarifying the role of dissonance and the function of the classroom, the practice-centered design studio model modifies my understanding of myself as "teacher" in this course. I am no longer the purveyor of theories but "coach," attempting to foster the habit of reflective practice, i.e., conscious design, reflective

observation, self-critique and use of theory, example, or experience (or other means at hand) as sources of continual refinement of teaching as practiced. In "coaching" them, I can provide guidance based on my interpretation of the theories I am familiar with, but I can offer no hard-and-fast rules that will rescue them from the complexities ("messiness") of this situation. Recognizing this is a necessary step in their development as Refective Practitioners.

These theoretical reflections will of necessity alter my practice as I explore the implications of the Reflective Practitioner model for my course. First, the newly designed version of my course will be called "Teaching Thinking." I will introduce the concept of Reflective Practice, and we will explore its appropriateness to their experience of teaching. The classroom will become our "design studio" centered on design problems posed by each teacher's practice. I will attempt to create a discourse community characterized by reflective dialogue incorporating theory and practice as well as reflection on our experiences (including discomfort) as we address the challenges of learning in a "thinking environment." By capitalizing on their questions about practice, I hope to guide my students into a deeper appreciation of theory--not as a source of answers but as a source of wisdom which can inform and stimulate their reflection as they address the design problems they face in their day-to-day teaching.

The theory-to-practice relationship suggested by this model is more subtle than my previous conceptions; it is also more reciprocal than the metaphor of master-apprentice implies. The full implications of this relationship emerge when we differentiate the instructional design studio as I have envisioned it here from the design studio model as it applies to training in the arts or architecture, or engineering.

Students in graduate education programs are very often practicing teachers; their instructors are usually researchers, theoreticians, and college professors, but rarely are they also public school teachers, although they usually have experience in the field. In contrast, the "master" in the design student may be a college professor and a practicing artist, architect, or an experienced engineer. Thus the gap between the professional practice of teachers and that of their instructors may be greater than that of other professionals in training.

In attempting to close this gap, it becomes useful to recognize the unique expertise contributed by both students and teacher. In the instructional design studio, both student and teacher are knowledgeable about the teaching situation, each from a different perspective. Because of this, the relationship between teacher (faculty) and teacher-student can take on the character of peers or colleagues rather than the master-apprentice relationship Schon describes. In the instructional design studio, theorist and practitioner function as a unit for a time, mutually informing and learning from each other. Through their collaboration, they can accomplish more than the "application" of theory; they can achieve a fusion of theory and practice as they think together about teaching problems. The theorist deepens her understanding of practice, which can inform her theoretical and empirical work. The practitioner sees how abstract ideas can be used to represent problems in ways that suggest solutions. Thus the instructional design studio provides a unique opportunity for reciprocal influence of teaching and theory.

The Reflective Practitioner model may offer a fresh perspective on the problems of encouraging high-level thinking in the writing classroom. Conceived as a "design studio," the writing classroom

becomes a place where it is appropriate to reflect on writing: to create and explore the implications of alternative approaches to writing problems, to learn from each others' writing and to provide each other with fresh insights about their work. This kind of exchange is the goal in many collaborative classrooms, where "draft workshops" and other collaborative activities help students learn to reflect on their writing. While working toward an acceptable finished product, students in such classrooms rehearse the analytical skills of "reflective practice" that characterize the craft of writing. Developing this stance is the most significant learning that can occur, because it fosters each student's continuing growth as a writer.

To summarize, then: In helping teachers think about teaching thinking, my intent has evolved and my emphasis shifted. First, I showed them "how to" translate and apply theory. Later, I tried to change thinking by creating cognitive dissonance. Now, I'm planning to try a design studio model to foster Reflective Practice. I expect to learn a great deal from my students in the process.

FIGURE 1
TEACHING TEACHERS ABOUT TEACHING THINKING:
THE DISEQUILIBRIUM MODEL

How does one create and resolve cognitive dissonance?

1. Create dissonance (disequilibrium) through CHALLENGE:

   Low structure (open-ended problems)
   High complexity (many theories and ideas to address)
   Novel situation (group work, request to justify ideas)

2. Facilitate resolution through SUPPORT:

   Work on concrete, familiar tasks (lesson plan design)
   Peer support within groups
   Easy access to teacher
   Second chances (rehearsals, revision)

How does one stimulate critical reflection?

1. Problematize experience

   a. Examine taken-for-granted characteristics of everyday experience (here, teaching, especially lesson planning):
      Articulate goals and assumptions
      Describe methods
      Reflect on congruence between goals, assumptions, and methods
         >using theory and research

         >using their ability to be objective about each other's work and (eventually) their own

   b. Create and focus on an out-of-the-ordinary experience:
      Formulate independent inquiry on unfamiliar subject
      Work in groups with interdependent consequences

2. Provide occasions for reflection
   journals
   class discussions

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